

Serial No.: 10/519,242
Filed: December 22, 2004

RECEIVED
CENTRAL FAX CENTER

OCT 12 2007

Complete set of claims

1(currently amended). An anti-reflective coating composition which comprises a fluorine-containing polymer, an acid, an amine and an aqueous solvent capable of dissolving these components, further where the coating composition has a pH ranging from about 1.0 to about 6.0, and further where the fluorine-containing polymer is a polymer comprising a polymer unit represented by the following general formula (I),



wherein R_f represents a straight or branched perfluoroalkyl group which may contain an etheric oxygen atom, further wherein the acid is at least one member selected from the group consisting of sulfuric acid, hydrochloric acid, nitric acid, phosphoric acid, hydrofluoric acid, hydrobromic acid, alkylsulfonic acid, alkylbenzenesulfonic acid, alkylcarboxylic acid, alkylbenzenecarboxylic acid, and those obtained by replacing all or part of the hydrogen atoms of the aforesaid alkyl group by fluorine atoms, and further where alkyl of the acid is 1 to 20 carbon atoms and the acid is in the amount of 0.1% by total weight to 2.0% by total weight.

2(previously amended). The anti-reflective coating composition as described in claim 1, wherein the fluorine-containing polymer further comprises a unit represented by the following general formula (II):



wherein X represents a fluorine atom or a chlorine atom.

3(canceled).

Serial No.: 10/519,242
Filed: December 22, 2004

4(original). The anti-reflective coating composition as described in claim 1, wherein the amine is at least one member selected from the group consisting of NH_3 , $\text{N}(\text{CH}_3)_4\text{OH}$, alkanolamine, alkylamine and aromatic amine.

5(original). The anti-reflective coating composition as described in claim 1, wherein the aqueous solvent is water.

6(previously amended). A pattern-forming method which includes a step of applying the anti-reflective coating composition of claim 1 on a photoresist film and, if necessary, a heating step.

7(previously presented). The anti-reflective coating composition as described in claim 1, where the coating composition has a pH ranging from about 1.0 to about 4.0.

8(previously presented). The anti-reflective coating composition as described in claim 1, where the coating composition has a pH ranging from about 1.6 to about 2.6.

9(previously presented). The anti-reflective coating composition as described in claim 2, where the coating composition has a pH ranging from about 1.0 to about 6.0.

10(previously presented). The anti-reflective coating composition as described in claim 2, where the coating composition has a pH ranging from about 1.0 to about 4.0.

11(previously presented). The anti-reflective coating composition as described in claim 2, where the coating composition has a pH ranging from about 1.6 to about 2.6.

Serial No.: 10/519,242
Filed: December 22, 2004

12(previously amended). The anti-reflective coating composition according to claim 1, wherein the acid is dodecylbenzenesulfonic acid.